



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,720	02/06/2004	Yutaka Yamamoto	9281-4738	8314

7590 03/08/2007
Brinks Hofer Gilson & Lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER

EVANS, JEFFERSON A

ART UNIT	PAPER NUMBER
----------	--------------

2627

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/773,720

Applicant(s)

YAMAMOTO ET AL.

Examiner

Jefferson A. Evans

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 25-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 10, and 25-29 is/are rejected.
- 7) ☒ Claim(s) 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claims 1-10 and 25-29 are pending.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 9, 10, and 25-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiraishi et al (U.S. 6,690,551). Shiraishi discloses a microactuator that includes a head holding substrate 50 with arms 51a,52a and formed from a sintered ceramic such as ZrO_2 wherein the term "sintering" indicates the substrate is fired, i.e. heated. Piezoelectric elements 51b,52b on the arms may be formed by printing (column 8 – lines 42 to 53). It is noted that the method limitation "fired" does not have a corresponding claimed physical result that results from the "fired" aspect and thus Shiraishi would not have had to actually disclose that the substrate is heated to meet product claims 1 and 9 in their present form.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2627

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2 to 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al in view of Farrow et al (U.S. 6,088,204) and/or Yanagisawa et al (U.S. 6,181,517). Shiraishi discloses a ZrO_2 substrate but not SiO_2 or B_2O_3 or Al_2O_3 .

Both Farrow and Yanagisawa disclose SiO_2 as an alternative to ZrO_2 for a substrate that is part of a head support arrangement.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form the substrate of Shiraishi to include SiO_2 as taught by Farrow and Yanagisawa et al. The motivation would have been: such a material was recognized to be of utility for such an application and provided advantages such as high strength and wear resistance.

Allowable Subject Matter

5. Claims 4 to 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. Response to Arguments filed 12-21-2006

A...On page 8, first paragraph, applicant contends that the feature fired is not a method limitation and provides distinguishable physical characteristics that are structure related and deserve full consideration under a product claim.

The Examiner would consider giving weight to this argument, however applicant has not specified what the distinguishable physical characteristics are or provided evidence that said distinguishable physical characteristics would result from firing in the present context or established that Shiraishi would not exhibit such characteristics.

B...on page 8, second paragraph, applicant contends that even under the Examiner's interpretation of the claimed subject matter, it is well established that product claims may include process steps to wholly or partially define the product claim and to the extent these process limitations distinguish the product over the prior art, they must be given the same consideration as traditional product characteristics.

The Examiner essentially agrees. The Examiner's position is that it has not been established that the "fired" limitation, which the Examiner still considers to represent a method based limitation, results in a physical result in the product that differentiates the claimed product from Shiraishi.

C...on page 8, third paragraph, applicant contends that Shiraishi teaches a contrary arrangement and that the arrangement taught by Shiraishi et al has a main section of the actuator that would be deformed during firing because ceramics such as Zirconia have high sintering temperatures and this deformation causes difficulty in achieving the necessary accuracy.

In response, it is not clear why the arrangement of Shiraishi represents a contrary arrangement. It is noted that evidence has not been provided considering the problematic deformation of the main section of the actuator, and it is noted that the claims include no limitations concerning dimensional accuracy.

Art Unit: 2627

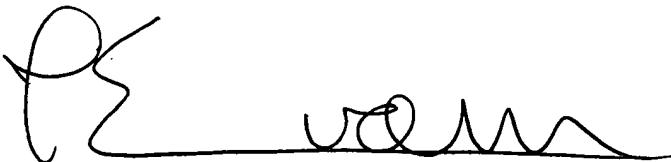
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jefferson A. Evans whose telephone number is 571-272-7574. The examiner can normally be reached on Monday to Friday, 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on 571-272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



JAE

March 4, 2007

Jefferson A. Evans
Primary Examiner
Art Unit 2627

**JEFFERSON EVANS
PRIMARY EXAMINER**